

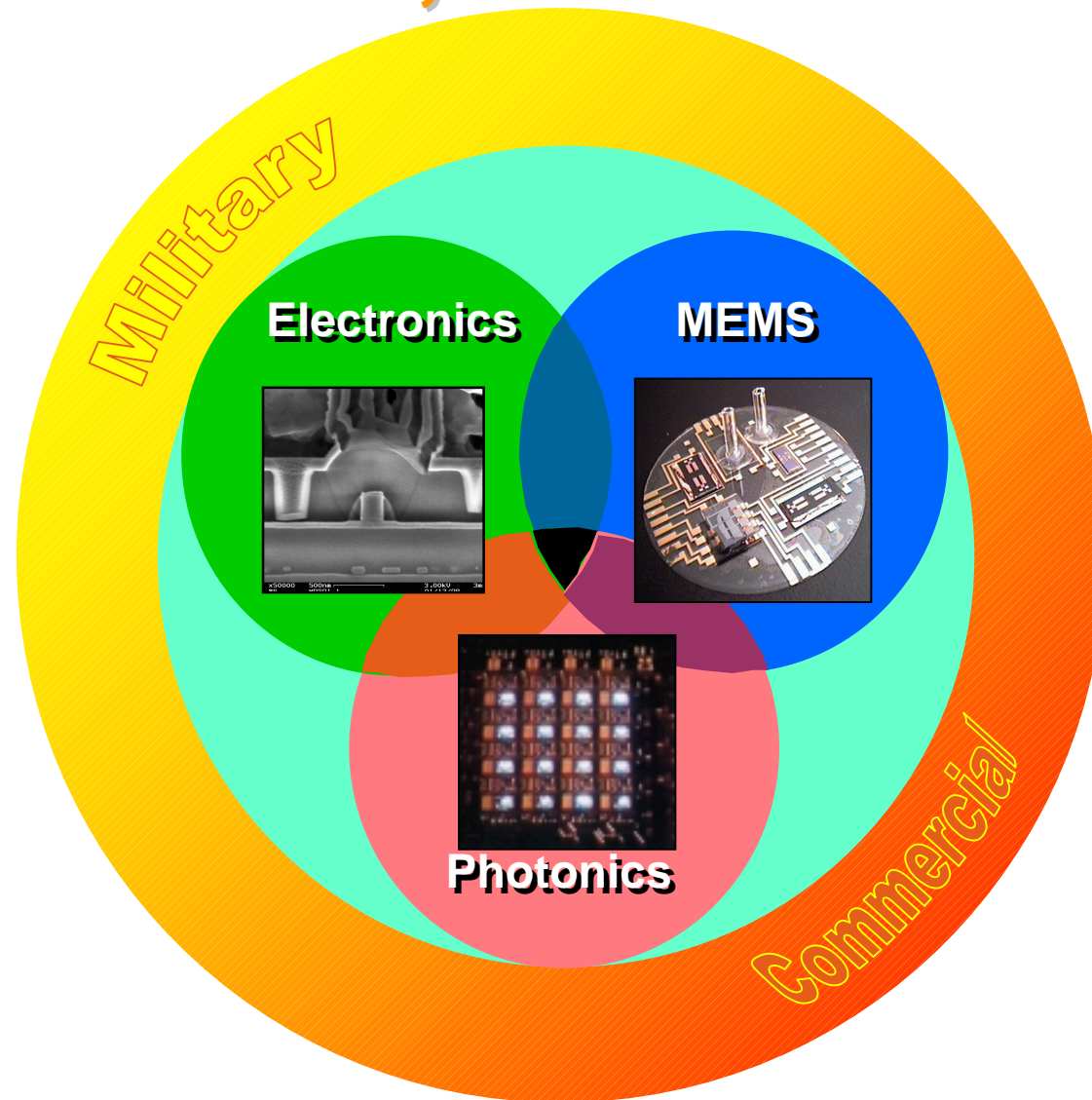
Microsystems Technology Office (MTO)

DARPA Tech 2000

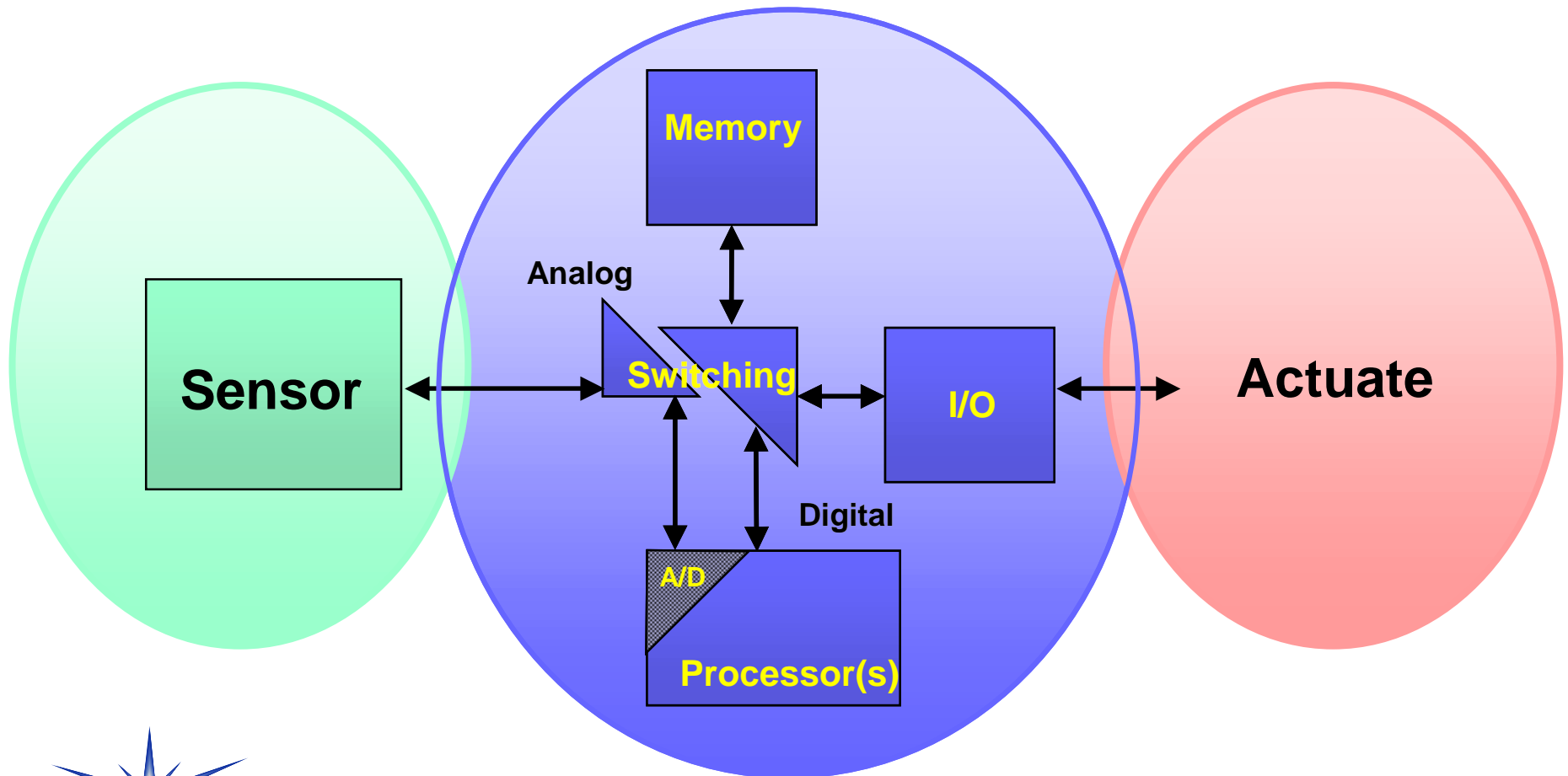
Dr. Robert Leheny, Director



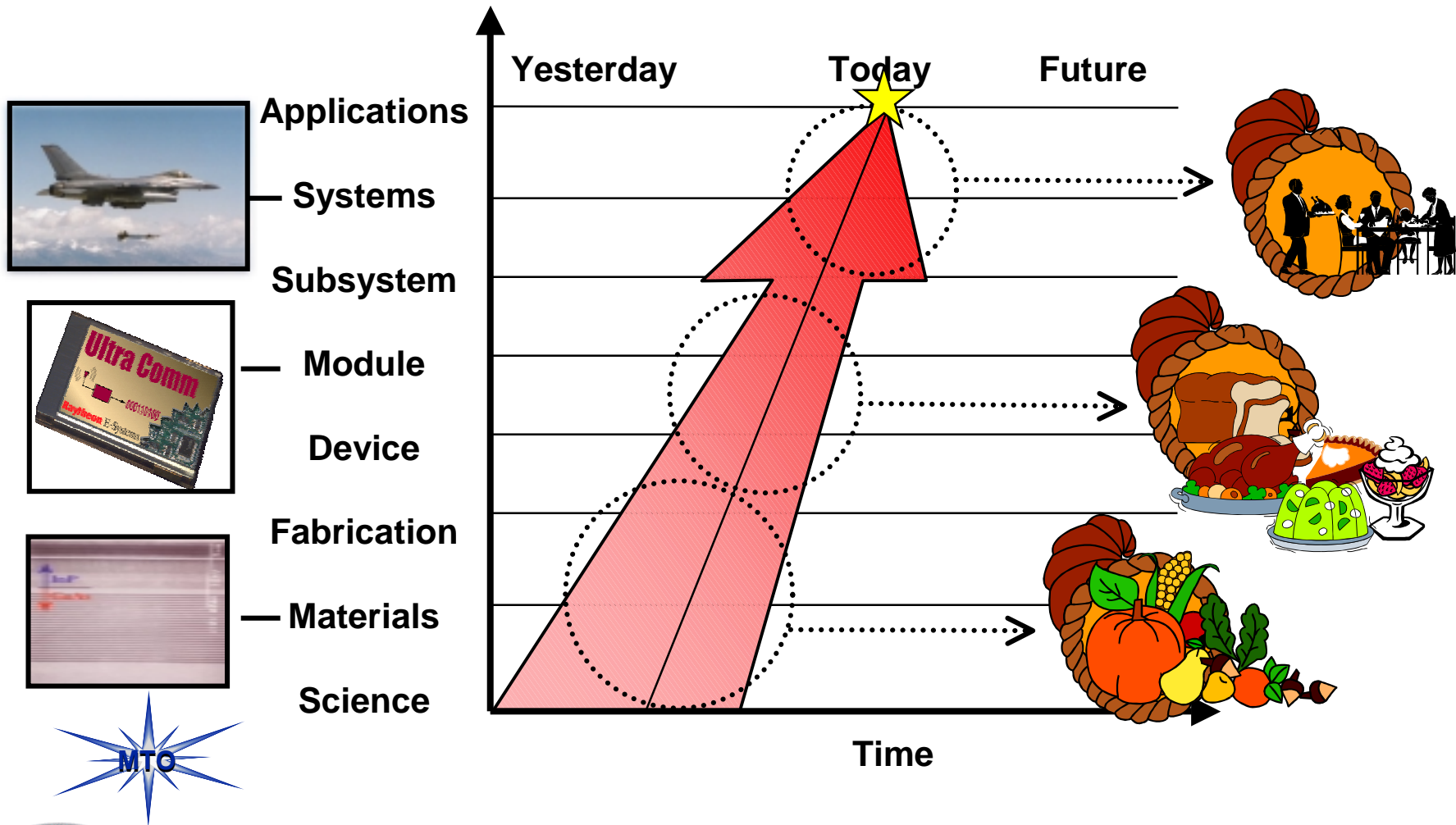
Driving a New Chip Scale Revolution in Electronics, Photonics & MEMS



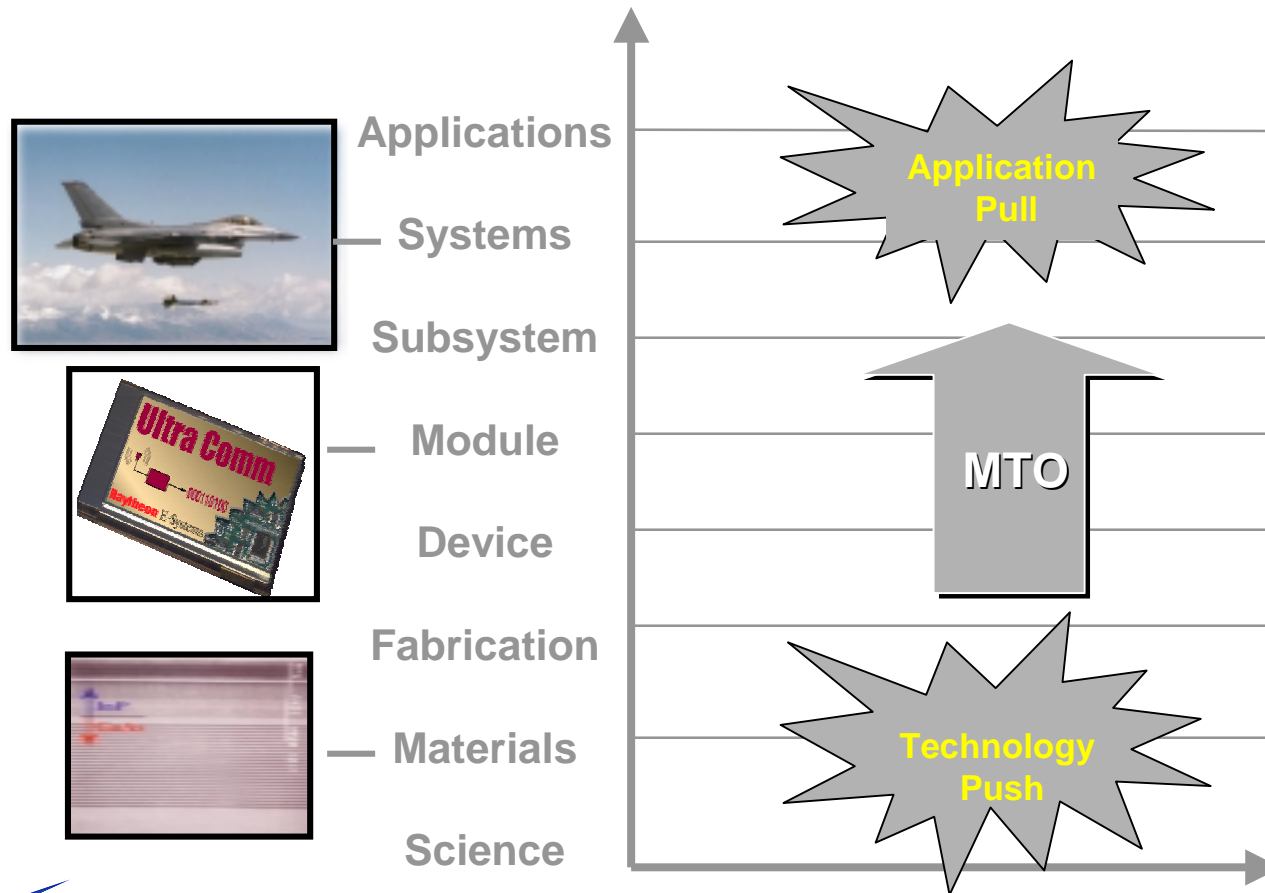
Platform Scale Information Systems



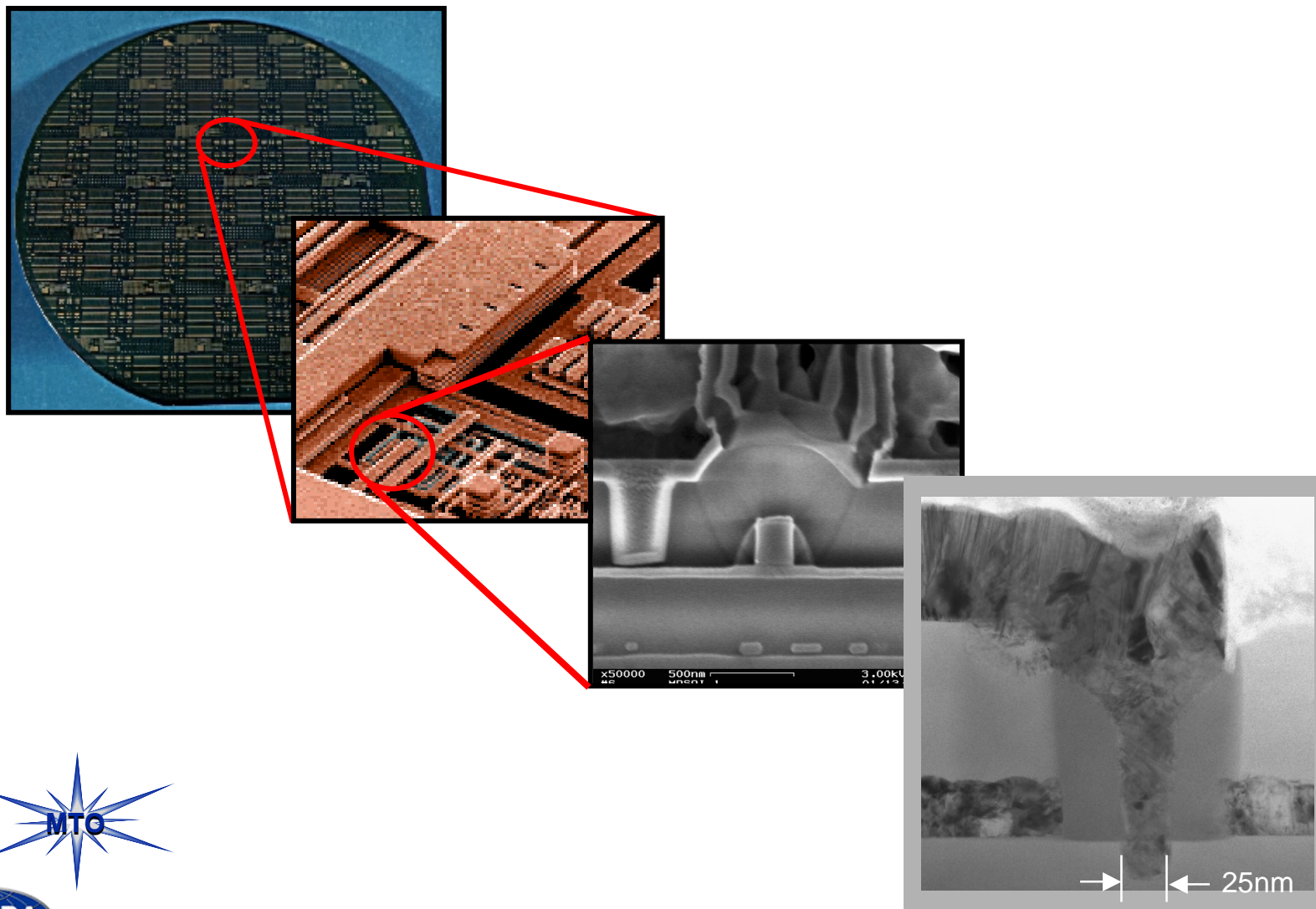
Flow of Technology Innovation



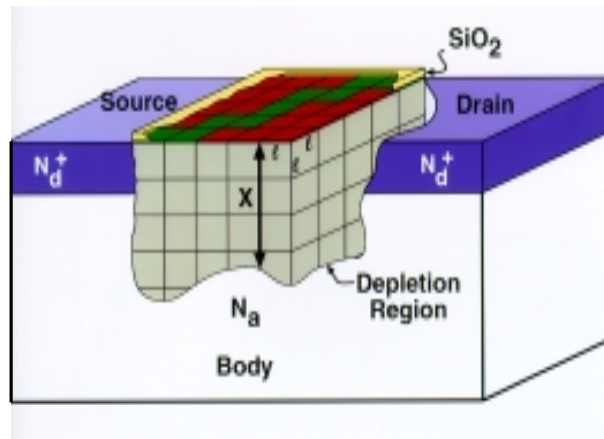
Flow of Technology Innovation



Advanced Micro Electronics Technology



Beyond Silicon-CMOS: The Limits of Scaling



Random Dopants

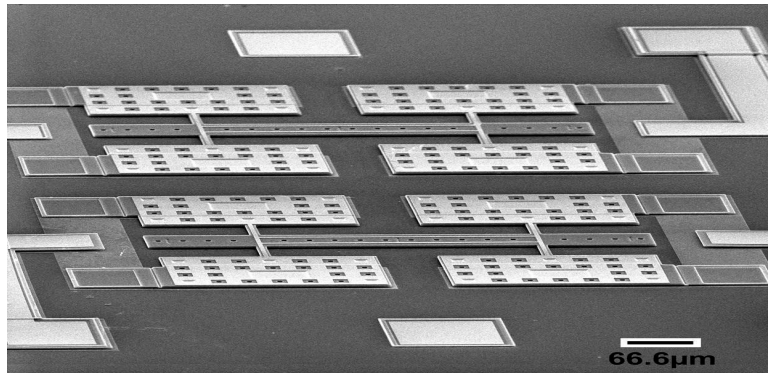
Physical Challenges to Continued Scaling:

- Contact Resistance
- Statistical Variation in Channel
- Atomic Oxide Thickness
- Approaching Molecular Scale Devices

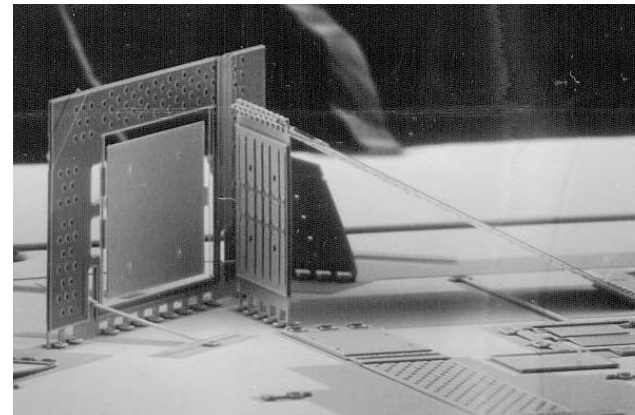


Micro Electro Mechanical Systems

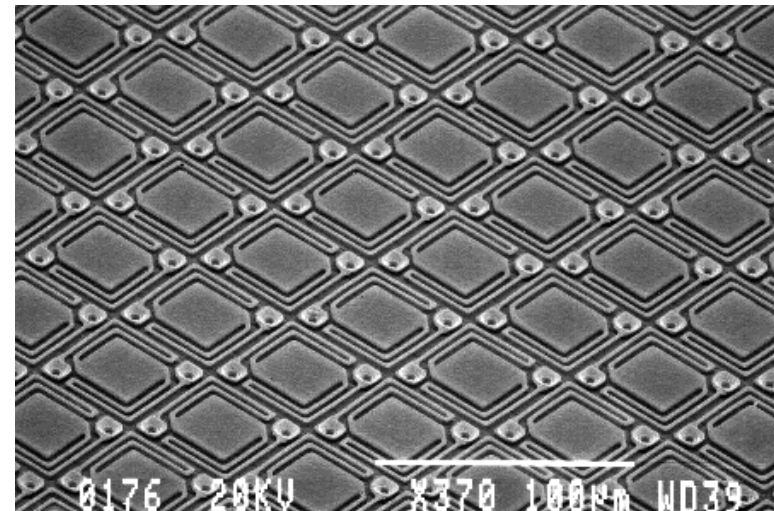
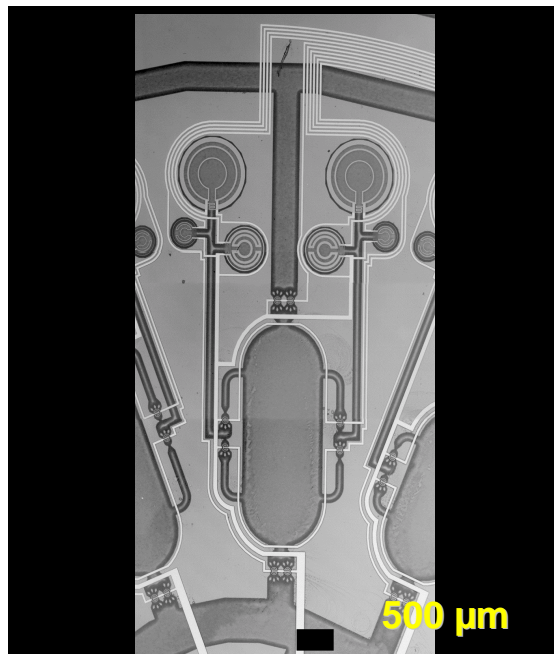
Magnetometers



Laser Deflection



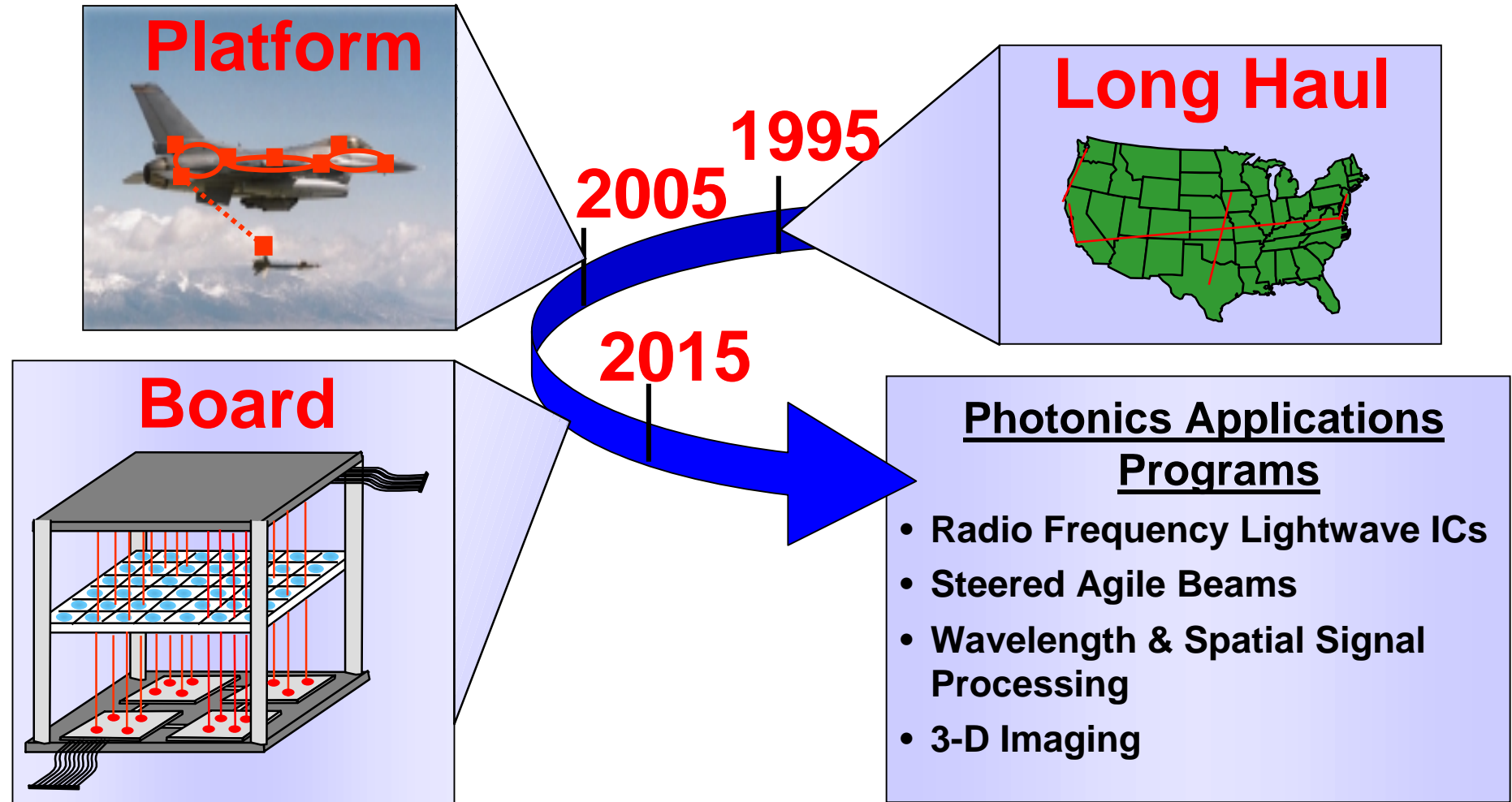
MicroFluidic Pump



High Sensitivity Microbolometers



Photonics in Military Information Systems



Outline of MTO Presentations

Office Overview	R. Leheny
Photonics Overview	E. Towe
From Microelectronics to Nanoelectronics	C. Marrian
MEMS & Micro Power Generation	W. Tang
Bio-Fluidic Chips (Bio-Flips)	A. Lee
Design of Integrated Mixed Technology Microsystems	A. Krishnan
Gallium Nitride and Related Wide Bandgap Materials and Devices	E. Martinez

